



UNITED STATES PATENT AND TRADEMARK OFFICE

CH
UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,852	09/23/2005	Hans-Peter Buchstaller	24945-0023	7098
26633	7590	11/08/2006	EXAMINER	
HELLER EHRMAN WHITE & MCAULIFFE LLP			CHU, YONG LIANG	
1717 RHODE ISLAND AVE, NW			ART UNIT	
WASHINGTON, DC 20036-3001			PAPER NUMBER	

1626

DATE MAILED: 11/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/549,852	BUCHSTALLER ET AL.	
	Examiner	Art Unit	
	Yong Chu	1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-30 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-30 are currently pending in the instant application and are subject to the following lack of unity requirement.

Election/Restrictions

Restriction is required under 35 U.S.C. 372.

This application contains the following inventions or groups of inventions, which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

Claims 1-20 are drawn to more than one inventive concept (as defined in PCT Rule 13), and accordingly, a restriction is required according to the provision of PCT Rule 13.2

PCT Rule 13.2 states that the international application shall relate to one invention only or to a group of inventions so linked as to form a general inventive concept (requirement of unity of invention).

PCT Rule 13.2 states that unity of invention referred to in Rule 13.1 shall be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features.

The general formula I A-D-B is a string of symbol, not a chemical formula. Due the numerous and widely divergent variables in the compound of formula (I), for example A, D, B, R_z, R_x, R_a, R_b, R⁵, R⁹, R¹⁰, R¹¹, R¹², R¹³, Ar¹, Ar², Y, X, etc., the inventions are lack of unity. A precise listing of inventive groups cannot be made. The following groups are exemplary:

Art Unit: 1626

Group I: Claims 1-10 are drawn to products of formula (I) wherein the formula I is formula IIa, wherein Y is O or S; and X is $(CR^{11}R^{12})_h$, and the remaining substituents are as defined in claim 3, pages 7-11 of the amendment filed on 23 September 2005.

Group II: Claims 1-10 are drawn to products of formula (I) wherein the formula I is formula IIa, wherein Y is NR^{21} ; and X is $(CR^{11}R^{12})_h$, and the remaining substituents are as defined in claim 3, pages 7-11 of the amendment filed on 23 September 2005.

Group III: Claims 1-10 are drawn to products of formula (I) wherein the formula I is formula IIa, wherein Y is $C(R^{22})-NO_2$, $C(R^{22})-CN$ and $C(CN)_2$; and X is $(CR^{11}R^{12})_h$, and the remaining substituents are as defined in claim 3, pages 7-11 of the amendment filed on 23 September 2005.

Group IV: Claims 1-10 are drawn to products of formula (I) wherein the formula I is formula IIa, wherein Y is O or S; and X is a bond, and the remaining substituents are as defined in claim 3, pages 7-11 of the amendment filed on 23 September 2005.

Group V: Claims 1-10 are drawn to products of formula (I) wherein the formula I is formula IIa, wherein Y is NR^{21} ; and X is a bond, and the remaining substituents are as defined in claim 3, pages 7-11 of the amendment filed on 23 September 2005.

Group VI: Claims 1-10 are drawn to products of formula (I) wherein the formula I is formula IIa, wherein Y is $C(R^{22})-NO_2$, $C(R^{22})-CN$ and $C(CN)_2$; and X is a bond, and the remaining substituents are as defined in claim 3, pages 7-11 of the amendment filed on 23 September 2005.

Group VII: Claims 1-10 are drawn to products of formula (I) wherein the formula I is formula IIa, wherein Y is O or S; and X is $(CHR^{11})_h-Q-(CHR^{12})_i$; wherein Q is O, S,

Art Unit: 1626

S=O, SO₂, SO₂NR¹⁵, and the remaining substituents are as defined in claim 3, pages 7-11 of the amendment filed on 23 September 2005.

Group VIII: Claims 1-10 are drawn to products of formula (I) wherein the formula I is formula IIa, wherein Y is O or S; and X is (CHR¹¹)_h-Q-(CHR¹²)_i; wherein Q is N-R¹⁵, N(R¹⁵)C(=O), N(R¹⁵)C(O), or NR¹⁵SO₂; and the remaining substituents are as defined in claim 3, pages 7-11 of the amendment filed on 23 September 2005.

Group IX: Claims 1-10 are drawn to products of formula (I) wherein the formula I is formula IIa, wherein Y is O or S; and X is (CHR¹¹)_h-Q-(CHR¹²)_i; wherein Q is (Chal₂)_j, (O-CHR₁₈)_j, (CHR₁₈-O)_j, CR₁₈=CR₁₉, (O-CHR₁₈CHR₁₉)_j, (CHR₁₈CHR₁₉-O)_j, C=O, C=S, C=NR¹⁵, CH(OR¹⁵), C(OR¹⁵)(OR²⁰), C(=O)O, OC(=O), OC(=O)O, C(=)N(R¹⁵), CH=N-O, or CH=N-NR¹⁵; and the remaining substituents are as defined in claim 3, pages 7-11 of the amendment filed on 23 September 2005.

Group X: Claims 1-10 are drawn to products of formula (I) wherein the formula I is formula IIa, wherein Y is NR²¹; and X is (CHR¹¹)_h-Q-(CHR¹²)_i; wherein Q is O, S, S=O, SO₂, SO₂NR¹⁵, and the remaining substituents are as defined in claim 3, pages 7-11 of the amendment filed on 23 September 2005.

Group XI: Claims 1-10 are drawn to products of formula (I) wherein the formula I is formula IIa, wherein Y is NR²¹; and X is (CHR¹¹)_h-Q-(CHR¹²)_i; wherein Q is N-R¹⁵, N(R¹⁵)C(=O), N(R¹⁵)C(O), or NR¹⁵SO₂; and the remaining substituents are as defined in claim 3, pages 7-11 of the amendment filed on 23 September 2005.

Art Unit: 1626

Group XII: Claims 1-10 are drawn to products of formula (I) wherein the formula I is formula IIa, wherein Y is NR^{21} ; and X is $(CHR^{11})_h-Q-(CHR^{12})_i$; wherein Q is $(Chal_2)_j$, $(O-CHR_{18})_j$, $(CHR_{18}-O)_j$, $CR_{18}=CR_{19}$, $(O-CHR_{18}CHR_{19})_j$, $(CHR_{18}CHR_{19}-O)_j$, $C=O$, $C=S$, $C=NR^{15}$, $CH(OR^{15})$, $C(OR^{15})(OR^{20})$, $C(=O)O$, $OC(=O)$, $OC(=O)O$, $C(=)N(R^{15})$, $CH=N-O$, or $CH=N-NR^{15}$; and the remaining substituents are as defined in claim 3, pages 7-11 of the amendment filed on 23 September 2005.

Group XIII: Claims 1-10 are drawn to products of formula (I) wherein the formula I is formula IIa, wherein Y is $C(R^{22})-NO_2$, $C(R^{22})-CN$ and $C(CN)_2$; and X is $(CHR^{11})_h-Q-(CHR^{12})_i$; wherein Q is O , S , $S=O$, SO_2 , SO_2NR^{15} , and the remaining substituents are as defined in claim 3, pages 7-11 of the amendment filed on 23 September 2005.

Group IVX: Claims 1-10 are drawn to products of formula (I) wherein the formula I is formula IIa, wherein Y is $C(R^{22})-NO_2$, $C(R^{22})-CN$ and $C(CN)_2$; and X is $(CHR^{11})_h-Q-(CHR^{12})_i$; wherein Q is $N-R^{15}$, $N(R^{15})C(=O)$, $N(R^{15})C(O)$, or $NR^{15}SO_2$; and the remaining substituents are as defined in claim 3, pages 7-11 of the amendment filed on 23 September 2005.

Group VX: Claims 1-10 are drawn to products of formula (I) wherein the formula I is formula IIa, wherein Y is $C(R^{22})-NO_2$, $C(R^{22})-CN$ and $C(CN)_2$; and X is $(CHR^{11})_h-Q-(CHR^{12})_i$; wherein Q is $(Chal_2)_j$, $(O-CHR_{18})_j$, $(CHR_{18}-O)_j$, $CR_{18}=CR_{19}$, $(O-CHR_{18}CHR_{19})_j$, $(CHR_{18}CHR_{19}-O)_j$, $C=O$, $C=S$, $C=NR^{15}$, $CH(OR^{15})$, $C(OR^{15})(OR^{20})$, $C(=O)O$, $OC(=O)$, $OC(=O)O$, $C(=)N(R^{15})$, $CH=N-O$, or $CH=N-NR^{15}$; and the remaining substituents are as defined in claim 3, pages 7-11 of the amendment filed on 23 September 2005.

Art Unit: 1626

Group IVX: Claims 1-10 are drawn to products of formula (I) wherein the formula I is formula IIa, wherein Y is C(R²²)-NO₂, C(R²²)-CN and C(CN)₂; and X is (CHR¹¹)_n-Q-(CHR¹²)_i; wherein Q is N-R¹⁵, N(R¹⁵)C(=O), N(R¹⁵)C(O), or NR¹⁵SO₂; and the remaining substituents are as defined in claim 3, pages 7-11 of the amendment filed on 23 September 2005.

Group VX: Claim 11 is drawn to a process for the manufacture of a pharmaceutical composition, characterized in that one or more compounds according to claim 1 and one or more compounds, selected from the group consisting of carriers, excipients, auxiliaries and pharmaceutical ingredients other than the compounds according to claim 1.

Group VIX: Claims 12-22 are drawn to use according to claim 13 or claim 15 characterized in that the disorder is lung cancer.

Group VIX: Claims 12-22 are drawn to use according to claim 13 or claim 15 characterized in that the disorder is brain cancer.

Group VIX: Claims 12-22 are drawn to use according to claim 13 or claim 15 characterized in that the disorder is non-cancerous.

Group VIIX: Claims 23-28 are drawn to use according to claim 1 as an A-raf-kinase inhibitor.

Group VIIX: Claims 23-28 are drawn to use according to claim 1 as an B-raf-kinase inhibitor.

Group IXX: Claim 29 is drawn to a method to producing compounds of formula II.

Group XX: Claim 30 is drawn to a compound of formula III.

Art Unit: 1626

Group XXI: Claim 31 is drawn to a compound of formula IV.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted. The elected group is subject to further restriction.

Again, this list is not exhaustive as it would be impossible under the time constraints due to the sheer volume of subject matter instantly claimed. Therefore, applicant may choose to elect a single invention at the similar scope as the examples shown supra (a product or a method of use of said product) by identifying another specific embodiment, i.e. another formula II_b-II_h, or value for X, Y, Q, Ar1, Ar2 etc..., not listed in the exemplary groups of the invention and examiner will endeavor to group the same.

The claims herein lack unity of invention under PCT rule 13.1 and 13.2 since, under 37 CFR 1.475(a) the compounds defined in the claims lack a significant structural element qualifying as the special technical feature evidenced by formula I A-D-B with numerous and widely divergent variables in the compound of formula (I). Accordingly, unity of invention is considered to be lacking and restriction of the invention in accordance with the rules of unity of invention is considered to be proper. Additionally, the vastness of the claimed subject matter, and the complications in understanding the claimed subject matter imposes a serious burden on any examination of the claimed subject matter.

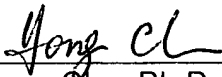
Art Unit: 1626

Telephone Inquiry

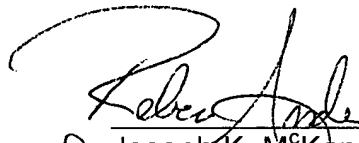
Any inquiry concerning this communication or earlier communications from the examiner should be directed Yong Chu whose telephone number 571-272-5759. The examiner can normally be reached on 7:00 am - 3:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph K. McKane can be reached on (571) 272-0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Yong Chu, Ph.D.
Patent Examiner, AU 1626



Joseph K. McKane
Supervisory Patent Examiner
AU 1626